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ABSTRACT

Despite technological development allowing fast identification of specific citations and information sources, there is still a significant time lag in obtaining documents not available in a given university library system. In an effort to improve the speed and to identify cost effective means of obtaining documents through interlibrary loan, this study measured the costs of using several different sources of supply in obtaining documents requested at the Albert R. Mann Library, Cornell University. Requests for citations were sent to three sources: a traditional library source via RLIN (Research Libraries Information Network) or ALA (American Library Association) form; a publication-specific source; and a commercial document delivery service. The time taken to receive the documents was measured and compared as well as the costs of handling the requests. Findings are presented in the following categories: preparation; online time and cost; days to receipt; cost of document; hard to locate documents; and whether the document was received. Suggestions for future studies and a possible model for obtaining documents for different types of requests are included. As a result of this study, changes were made in document delivery to improve services to students and faculty using Mann Library. (Author/THC)

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DOCUMENT DELIVERY: A STUDY OF DIFFERENT SOURCES

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Abstract

In spite of technological developments allowing fast identification of specific citations and information sources, there is still a significant time lag in obtaining documents not available in a given University library system. In an effort to improve the speed and identify cost effective means of obtaining documents on "interlibrary loan," this study measured the costs of using several different sources of supply. Requests for citations were sent to three sources; the time taken to receive the document as well as the costs of handling the request were measured.

As a result of the study, changes were made in document delivery to improve services to students and faculty using Mann Library.

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Evaluation of Document Delivery Sources

Introduction

With the current state of information technology, librarians and library users have the ability to rapidly identify, verify and locate citations to the scientific literature. The use of online bibliographic databases through such services as Dialog and BRS to find citations, and the verification and location of sources through bibliographic utilities can be carried out often in a matter of minutes. However, if the document is not available locally, a significant delay can occur while the item is requested through interlibrary loan. Naisbett (1984) has called this time lag between the decision to get the information and its receipt, "the information float".

Librarians have traditionally used other libraries in their attempts to obtain documents not held by their own institution. This report describes a study to investigate whether the information float can be reduced by using commerical sources for documents and by reducing the time and cost of detailed verification required in interlibrary loan.

Environment of the Study

The Albert R. Mann Library, of Cornell University, is the largest academic agricultural library in the country and its collection is second only to the National Agricultural Library. Cornell is one of the thirty-two land-grant members of the Association for Research Libraries. Interlibrary loan requests are accepted for all citations not found on the Cornell campus, from all members (faculty, students, and staff) of the Colleges of Agriculture and Life Sciences, and Human Ecology.

The impetus for pursuing this study came from several sources. An ARL funded study recently carried out in Mann Library has provided evidence that speed of document delivery is one of the greatest concerns in faculty research and teaching. In addition, staffing changes at Mann Library raised questions about internal interlibrary loan procedures and practices. A review of interlibrary loan was begun, with this present study forming a component.

Objectives

The objectives of the study were:

1. To evaluate sources for document delivery on the basis of cost and/or speed; specifically to test whether commercial document sources can provide documents more quickly and/or more inexpensively than traditional library sources.

2. To provide a basis for reviewing the internal procedures in verifying and submitting requests for off campus documents. This included developing a model for when it is appropriate to go to various sources of supply.

Methodology

A sample of 124 interlibrary loan periodical requests were taken from those submitted during the period September 1984 to March 1985. Sample requests were selected if the citation was a periodical and the date of publication was after 1975. Citations which were verified to be on the Cornell campus or at the Cornell University Medical College in New York City were not selected.

Each sample citation was sent to three possible sources for filling the document request:

1. a traditional library source via RLIN or ALA form.

2. a publication specific source. Those used were the OATS (now known as The Genuine Article) service of ISI, Inc., Chemical Abstracts Document Delivery Service and the Commonwealth Agricultural Bureaux. These will be referred to as ISI, CAS and CAB.

3. a commercial document delivery service, Information on Demand, Inc., referred to as IOD.

The procedures for sending requests for each of these sources were:

1. Each sample request was verified in the usual manner for regular interlibrary loan purposes. Verification included checking RLIN for locations. If none was found, other locations were sought in OCLC, CASSI, the Union List of Serials and other regional union lists of serials. Requests were then submitted via RLIN or ALA form.

   For these requests, we measured the time taken to choose a location; the time and cost to send the request (online on RLIN or by ALA form); the number of days until the document was received; and the cost of the document.

2. The journal lists for ISI, CAB and CAS were checked to see if they indexed (or provided documents in the case of ISI) the cited journal. Depending on the date of publication, a note was made of the potential Dialog files on which the citation would be located. The citation was then searched on either the appropriate database or in the case of multiple locations, any one of the databases at random. In some instances, the item could not be located in any of the appropriate Dialog files so it was not requested from any of the publication specific sources. The item was requested through DIALORDER from the first source on which it was located. In most instances items were searched online by use of title words. From experience it was found this was the easiest and least expensive way to search for a citation. The study measured the time and costs involved in locating the source files, locating the citation online, requesting the document; the number of days to receipt; and the cost of the document.

3. Items to be requested from Information on Demand were ordered while still logged on to the database as noted in 2. If the item could not be located and therefore verified, in any of the three sources as noted in 2, it was ordered through the command ORDERITEM (the citation was typed into the system to be transferred electronically to IOD).

   The study measured the time to locate a source file and the online verificaton and request costs. Where the citation was not found in a Dialog file, the time and cost to type in the request were measured. Also measured were the days to receipt of the document and the document cost.

Results

Using the spreadsheet component of Lotus 1-2-3, the data were entered and simple counts and averages taken for each set of measurements.

TABLE 1

	ISI	CAB	CAS	Combined ISI CAB CAS	IOD	Libraries
Preparation						
Average time in minutes	1	1	1	1	1	3.2
Online time						
Average time in minutes	3.26	2.11	3.45	3.10	3.40	1.59
Online cost						
Average cost	$7.98	$3.16	$6.06	$5.73	$6.15	$1.72
Days to receipt/ notification						
Average number	7.95	19.42	6.04	11.14	20.53	13.56
Highest number	27	58	31	--	111	118
Lowest number	3	9	3	--	3	3
Cost of document						
Average cost	$8.72	$10.18	$12.44	$10.45	$13.25	$0.02
Highest cost	22.50	12.00	13.00	--	28.00	1.80
Lowest cost	7.50	10.00	12.00	--	7.50	0.00
Not in the journal lists	52	59	27	11	--	--
Document received						
Percent rec'vd checked online	53%	79%	53%	56%	96%	98%
Percent rec'vd found online	71%	92%	97%	87%	--	--

Findings

Discussion of these results follows.

Preparation

As noted elsewhere, more study needs to be made of verification. For this study, preparation consisted of checking the potential locations in journal lists and RLIN or OCLC. Checking library locations takes a little longer on average than checking journal lists. Lack of convenient access to an OCLC terminal in Mann Library accounts for part of this increased time. Also noted elsewhere is the fact that these requests were straightforward and therefore did not require a lot of preparation.

Online time and cost

Online time and cost are greater for the commercial requests as the citation must be searched, stored and then ordered. The three databases searched (4 files of ISI, 4 files of Chemical Abstracts and 1 file of CAB) are all expensive and if several files are searched, costs mount rapidly. ISI does offer discounts for institutions buying paper copies of their products; the figures in this study are not discounted. When requesting an item from Information on Demand through the ORDERITEM command, (i.e., submitting a freetext request in an inexpensive file), time and costs are much reduced with the usual time being less than 2 minutes and the cost less than $1.00. It would be possible to order items from the publication specific sources in the same manner and thus reduce the online searching costs markedly. However, discounts are usually given if an abstract or accession number is provided, and finding the item in an online file does increase the chances of receiving the document. RLIN costs for one interlibrary loan request are fixed at $1.70 plus CPU costs. Up to four locations can be searched in a string with a cost of .71 cents for each message forwarded.

Days to receipt

The average time in days between the submission of a request and receipt of a document (or notification of its nonavailability) is lower for the publication specific sources than the other sources. ISI and CAS were consistently fast; the high numbers listed are not typical. The majority of their documents were received in under 10 days. CAB was consistently slower; documents were sent airmail from CAB but the delays did not appear to be related to the mails. IOD was also consistently slow with the majority of their documents received between 12 and 30 days. The libraries did not show a consistent pattern. There was wide variation between 3 and 60 days with the high of 118 as an aberration.

Documents were received from the commercial sources through the US Postal Service by first class mail. Delays did not appear to be related to the mails although this was not checked carefully. Documents from the majority of libraries were received by UPS. Further study needs to be done on the most cost effective means of shipping.

Cost of document

Libraries are clear winners in this category. With the reciprocal arrangements in which Cornell participates, photocopies received are generally free. However, it should be noted that free is not truly free; there are various estimates in the literature on the real costs of such "free" transactions. This study did not attempt to recalculate these costs.

The commercial sources generally have fixed prices although there are variations if royalties or extra photocopy charges are added. Payment of copyright fees by the supplier is one advantage of using the commercial sources since it frees the library from maintaining complex records.

Not in the journal lists

In checking the journal lists for potential locations, a record was kept of when a journal title was not listed (and therefore not subsequently searched online). For 11 of the requests, none of the commercial sources listed the journal title of the requested citation although some of these were checked online when it seemed that they might be found. CAS proved to be more useful than expected and the range of subjects covered by the CASSI list broader than its title would suggest. A new edition of CASSI published during the time of this study only served to increase the usefulness of this database.

Because large databases in Dialog are broken up into smaller files, the average number of files searched was calculated to be 1.77%. With increased skill at guessing when a citation might have been indexed and therefore which file it might be in, the number (and thus online costs) could be reduced.

Requests to IOD were made from the file in which the citation was found but there were 12 requests made as an ORDERITEM or freetext request when the citation was not found online.

Document Received

The bottom line in any document delivery process is whether the document is delivered. The libraries supplied a greater percentage of the documents requested. Although educated guesses could be made about which files would be appropriate to check when using the online commercial sources, sometimes it was necessary to check several before finding the correct citation. Of the total number of requests, 115 were checked online, 82 were found online and as noted below, 68 were actually supplied. These commercial sources do not do as well as the library sources where 121 citations were found on RLIN or OCLC and 119 were supplied. The commercial sources have limits in what is actually offered and reasons for nonsupply of documents apparently available were usually "supply exhausted", "too old" or "copyright". The figures provided in "percent received checked online" are a percentage of the items checked online. As the study was limited by date to items which might be expected to be in the selected databases, the numbers found and received are considered low. When the percentage received of those found online is calculated, the result is higher. At the end of the study, some items had not yet been received. Inclusion of these in the figures is not expected to change any of the overall results.

Discussion

In this particular study, the sample requests studied were relatively straight-forward serial requests which needed little verification. We had not predicted that RLIN would prove to be so useful in document delivery procedures in comparison to the other commerical sources studied. It should be noted that there is a distinction between the "easy" and the "difficult" interlibrary loan requests submitted by library patrons. Easy requests are considered those which have an easily identified periodical title with a verifiable citation. Difficult requests include publications with unclear titles or issuing bodies and citations which are difficult to verify. Included in this category are conference proceedings, publications of some corporate institutions and some foreign publications. At least in the present study of "easy" requests, use of RLIN clearly proved more satisfactory for the majority of submitted requests. Although the publication specific sources supplied documents faster than libraries, it was not so much faster that it outweighed the low cost of library supplied documents.

Although few internal procedures for the bulk of requests at Mann Library were changed as a result of this study, we did gain some useful ideas and developed guidelines for the most efficient use of commerical sources for some difficult items encountered.

In the A.R. Mann Library, we do not insist on a fully verified request from the patron. We found that use of title words was the most efficient method of searching the online bibliographic databases and in the majority of cases the one result was the correct citation. However there are some pitfalls. Very occasionally there may be duplicate titles for different citations, and sometimes a search by English words will retrieve a foreign language version of the document. If a patron can provide an identification number from a printed index, searching by this number will provide the fastest, most accurate verification of a citation.

In searching online, the completeness of the citation is not as important as regular interlibrary loan procedures require. The majority of the documents requested in this study were not checked any further than the title words. Where more checking was required, the author's name and initials were helpful but an abbreviated citation was usually fairly easily identified. In using the publication specific sources, careful note must be made of the limits placed on supply of documents by the supplier. For instance, CAS will supply English language documents for 10 years and Russian language for 15 years. For some journals, ISI will prvide documents only so long as their supply of reprints lasts. Costs of using online systems will vary according to the type of equipment used, the time of day a system such a Dialog is used and the stability of the telecommunication networks used. Experimentation might be necessary to find the best local combination. Searching for a known item online is a different procedure than searching by subject and like most procedures, can be done more economically after sufficient practice. Being well prepared, doing many requests at once and developing a "rhythm" in searching are important in helping to keep costs down when searching and

ordering online from commerical sources. The billing mechanisms of the commercial suppliers varied, with some being easier to deal with than others. If commercial sources are used, internal record keeping and accounting procedures may have to be revised to match invoices with requests.

Future studies

From the results of this study, we believe that more work should be done on at least two aspects of interlibrary loan procedures which were not covered by the present investigation.

A similar study needs to be carried out on "difficult" interlibrary loan requests. We predict that commerical sources may prove more cost effective if manual verification is more time consuming than online verification of these requests.

Verification procedures also require more study. [illegible]t sources are checked, in what order and at what cost are no[illegible]rly ide[illegible]ed in the A.R. Mann Library. We believe that more effi[illegible] costly procedures could be developed and possible algorithms deve[illegible] use by other libraries.

Conclusion

Given the variety of sources from which libraries can obtain documents for their users, the traditional term "interlibrary loan" has become obsolete. The generic term "document delivery" appears to be more suitable, with interlibrary borrowing being only one species. In this study we evaluated various sources of supply with the results showing that under the present set of circumstances the use of RLIN and other library sources is about as fast as,and less expensive than commercial suppliers. The existing arrangement of our membership in RLIN means that use of this system is more cost effective for "easy" requests. The value of existing or potential consortium arrangements must be taken into account when evaluating sources of document supply.

The study did provide some ideas for minor changes in verification procedures but further study on "difficult" citations is required to provide more definitive information on these procedures. This study has already heightened our awareness of the variety of sources of supply and it has become more acceptable for some categories of documents to be obtained from commercial sources, particularly publication specific sources. For example reports available from EIC/Intelligence have been ordered and CAB has been used to verify and obtain documents from such international agencies as FAO.

A possible model for obtaining documents has been developed in which requests are searched and/or ordered in this order:

Table 2

consortium membership	* RLIN * Center for Research Libraries (via RLIN)	
national union lists of serials	OCLC * CASSI Union List of Serials New Serial Titles	RLG locations may be found in these and used first before non RLG locations
publication specific sources	* CAB * CASSI * EIC U.S. Agency for International Development	
other	regional union lists UNIPUB journal publishers	

* items would be ordered online from these sources

As noted earlier there are still many aspects of document delivery to be studied. The present study was limited in its time frame, size of the sample, and the limited genre of the sample. Also not included in the study were the use of telefacsimilie, or an examination of the mode of delivery (eg first class mail vs. UPS). It also became evident that some costs are difficult to identify (eg. exact cost of each search on OCLC or RLIN) and therefore this study should be used as a gross indicator of costs involved.

Document delivery service for our library users has improved with our increasing flexibility in obtaining documents from a variety of sources. In addition, our confidence in using our traditional library networks has been strengthened.